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AUTHOR Harrington, Ann-Marie, Ed.; Walsh, Catherine Boisvert, Ed.; Bryant, Elizabeth Burke, Ed.

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ABSTRACT

One of the most common pediatric health problems is childhood lead poisoning. This report examines the preventable problem of lead poisoning. The report describes childhood lead poisoning as both a health problem to which infants and young children are most susceptible, and as a housing problem. More than half the housing units in Rhode Island have potential lead paint hazards. The report details the rate of childhood lead poisoning in Rhode Island, highlighting racial, income, and location differences. It also describes current strategies for combating childhood lead poisoning in Rhode Island, including screening, medical treatment and follow-up, hospitalization, inspection of housing, lead abatement, and enforcement. In addition, the report delineates the elements of a comprehensive strategy to reduce childhood lead poisoning and policy initiatives which have had some success in reducing childhood lead poisoning. Finally, the report describes promising strategies undertaken by state government, financial institutions, enforcement agencies, and the local community. (KB)

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Issue Brief

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CHILDHOOD LEAD POISONING

A HEALTH PROBLEM...

Childhood lead poisoning is one of the most common pediatric health problems and is entirely preventable. Infants and young children are most susceptible to the toxic effects of lead. Lead's effects on the developing central nervous system may be irreversible. While the overall rate of lead poisoning is declining, the rate of lead poisoning for children living in homes with substantial lead contamination remains high. Rhode Island law requires regular lead screening of all children under age six.

34,389 Rhode Island children under age 6 were screened for lead in 1995. One in every five children screened had a blood lead level greater than 10 micrograms of lead per deciliter of blood (ug/dL). Blood lead levels greater than 10 ug/dL can cause learning disabilities, hyperactivity, antisocial behavior, attention deficit disorder, hearing and speech impediments, and loss of intelligence. Higher levels of lead exposure can result in serious health problems and can lead to coma, convulsions, and death.

AND A HOUSING PROBLEM...

Childhood lead poisoning is a housing problem which directly affects the health of children. Deteriorating lead-based paint and lead-contaminated dust are the main causes of childhood lead poisoning. In 1978 the sale of lead-based paint was prohibited, yet more than three-quarters of units built before 1978 are believed to contain some lead paint. Rhode Island Housing estimates that more than half of the 414,572 housing units in Rhode Island have potential lead paint hazards.

A large proportion of Rhode Island's rental stock is more than fifty years old, and many units are in need of repair. The lack of affordable housing in many communities has forced low-income families to live in older dwellings with deteriorating lead paint, placing children at risk for lead poisoning. Although all children are at risk for lead poisoning, low-income children and children of color are particularly likely to be affected.

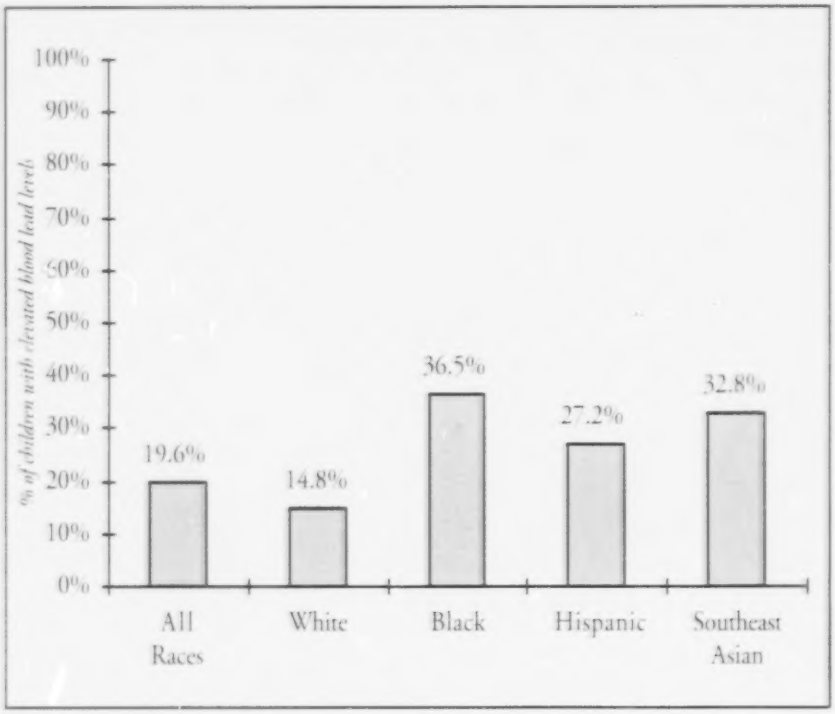
Further reductions in the rate of childhood lead poisoning depend on improving housing conditions for Rhode Island's children so that lead exposure is minimized and eliminated. Continued attention to early identification and follow-up for children already exposed is critical to healthy child development.

RACE AND INCOME DISPARITY

Although the overall rate of lead poisoning is declining, the Third National Health and Nutrition Examination Survey (NHANES III), found that the rates for those living in homes with substantial lead contamination have not changed. Although all children are at risk for lead poisoning, low-income children and children of color are disproportionately affected.

- Black children have higher blood lead levels in all age, urban status, income, and educational categories.
- The highest blood lead levels are found in poor black children between the ages of 1 and 2 years old living in large metropolitan areas.
- Low-income children are more than three times as likely as middle-income children to have blood lead levels of 10 ug/dL or greater.
- While overall rates of lead poisoning are declining, rates for those living in homes with lead contamination have not changed.
- Inadequate nutrition and anemia, more common in poor children, further increase a child's susceptibility to lead poisoning.

CHILDREN UNDER AGE 6 SCREENED WITH BLOOD LEAD LEVELS ≥ 10 UG/DL BY RACE, RHODE ISLAND, 1995



Source: Rhode Island Department of Health, Division of Family Health, Blood Lead Summary, 1995.

- In Rhode Island almost 1 in 5 young children screened in 1995 had elevated blood lead levels (≥ 10 ug/dL). Black, Hispanic, and Southeast Asian children were more than twice as likely as white children to have elevated blood lead levels.
- More than 35% of Providence and Central Falls children who are eligible to enter kindergarten in the Fall of 1998 had lead levels ≥ 10 ug/dL. Almost half of the RI children in this age group with elevated levels live in these two communities, which also have the highest child poverty rates in the state.
- Chipped and peeling lead-based paint increases exposure to lead. No community can be assumed to be free from childhood lead poisoning.

ADDRESSING THE NEEDS OF CHILDREN EXPOSED TO LEAD

Primary prevention (preventing lead poisoning before it occurs) has always been the goal of childhood lead poisoning prevention programs. In practice, however, most programs focus on secondary prevention, dealing with children who have already been poisoned.

The current strategy for addressing the problem of lead poisoning in Rhode Island involves screening, medical treatment and follow-up, lead inspection of housing, lead abatement, and enforcement. The process and criteria for each of these actions are highlighted here.

SCREENING

Rhode Island state law requires regular lead screening for all children under age 6. Early detection can prevent increased exposure, allow for medical management and parent education, and target high-risk communities for outreach. The RI Department of Health (RI DOH) Childhood Lead Program has a database that provides a tracking system for almost all the Rhode Island pre-school children who have been screened for lead poisoning.

MEDICAL TREATMENT

At persistent levels ≥ 15 ug/dL the RI DOH recommends medical evaluation and follow-up. When a child is significantly lead poisoned (≥ 25 ug/dL), medical intervention (chelation) should be considered. The child can be referred to one of the two lead clinics in RI, located at St. Joseph's Hospital and Hasbro Children's Hospital. At ≥ 25 ug/dL a child can manifest a learning disability, antisocial behavior, and/or decreased hearing ability.

HOSPITALIZATION

At ≥ 70 ug/dL a child is referred for hospitalization. 20 children were hospitalized in Rhode Island in 1996 for severe lead poisoning. Hospitalization may be required for children with blood lead levels ≥ 45 ug/dL who are not able to return to a lead-safe home. Without a lead-safe home, outpatient treatment for this level of lead poisoning is not feasible.

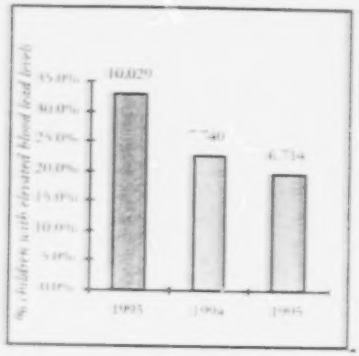
INSPECTIONS

If a child's confirmed blood lead level is ≥ 25 ug/dL, the RI DOH assesses and inspects the child's home for lead hazards. If lead hazards are found, a notice to abate is given to the homeowner. If a homeowner fails to comply with an abatement and/or control order, the case is referred to the municipal code enforcement agency for prosecution in housing or district court.

ABATEMENT

Lead hazards can be temporarily removed from the home by repairing deteriorated paint and covering soil which is lead-contaminated. Permanent removal of lead can only be done by a licensed lead abatement contractor, regulated by the RI DOH. Improper abatement can create additional lead hazards. Lead abatement can cost as little as the expense of a routine touch-up paint job for a well-maintained home. However, abatement costs for homes that have not been maintained can cost up to $7,000 to $9,000 per unit.

ELEVATED BLOOD LEVELS ≥ 10 UG/DL
RI CHILDREN UNDER AGE 6
1993-1995



n=30,360 (1993); 34,613 (1994); 34,389 (1995)
Source: RI Department of Health
Office of Health Risk Assessment, 1993-1995

Progress has been made in reducing the numbers of Rhode Island children with lead exposure. Further progress requires concerted attention to providing lead-safe housing for children, especially in low-income communities at highest risk.

ENFORCEMENT

390 homes were referred to the RI DOH Office of Risk Assessment in 1996 for inspection for lead hazards. Approximately 250 were inspected and all but a few were found to have lead hazards. Peeling and chipping paint are violations of the minimum housing code. If a homeowner fails to repair the paint within a specified period of time, a notice of violation is filed by the municipal code enforcement office and referred to the city or town solicitor's office for prosecution in Housing or District Court. RI DOH also has authority to fine property owners who are in noncompliance with the lead law.

Lead poisoning is a public health problem that requires comprehensive solutions which promote the health of children. A successful approach to the elimination of lead-based paint hazards includes attention to how a state maintains and renovates its housing stock, finances its renovation, educates its public about lead hazards, and responds when children are poisoned by lead. A range of strategies and shared responsibilities is needed to guide legislators, policymakers, landlords, families, and community agencies.

ELEMENTS OF A COMPREHENSIVE STRATEGY TO REDUCE CHILDHOOD LEAD POISONING

As recommended by the Lead-Based Paint Hazard Reduction and Financing Task Force of the U.S. Department of Housing and Urban Development, June 1995.

- Elevate the standard of housing. Programs which intervene after the problem has occurred (such as treatment programs and door-to-door screening) are necessary, yet do not fully prevent others from being poisoned. Initiatives are needed that focus on increasing the supply of safe and affordable housing for children and families.

- Use liability and insurance systems to compensate children who have been harmed by a landlord's noncompliance and give incentives to landlords who maintain lead-safe properties.

- HUD, Fannie Mae, and Freddie Mac should urge lenders to develop and implement public-private lending partnerships to finance lead hazard control as part of acquisition and rehabilitation financing. In order to encourage private financing, secondary public financing should be fully subordinated to the first mortgage and should not detract from the borrower's debt repayment capacity. (One strategy that has been proposed in Rhode Island to ensure the transfer of lead-safe housing would require banks and mortgage companies to perform lead inspections prior to financing. The mortgage amounts would reflect the additional costs of abatement or lead hazard control).

- Increase public awareness and education, especially in those communities with older housing stock, by disseminating information to parents, legislators, landlords, Section 8 inspectors, educators, and contractors.

- Enforce citations quickly and effectively when landlords fail to make their property safe. The code enforcement system, currently the principle enforcement response to lead hazard violations, needs to be adequately staffed to enforce the state's housing and building codes.

POLICY RESPONSES TO LEAD POISONING

The implementation of the Clean Air Act amendment in 1970 is a powerful example of how policy can positively effect public health. The Act called for a phaseout of the use of lead in gasoline and resulted in a reduction in blood lead levels by as much as 60% over the past twenty years.

The following policies have shown some success in reducing childhood lead poisoning and promoting lead safe homes.

CENTERS FOR DISEASE CONTROL AND PREVENTION

In 1991, the Centers for Disease Control and Prevention (CDC) issued its fourth revision of "Preventing Lead Poisoning in Young Children". The CDC stated that prevention activities should be aimed at reducing children's lead levels to below 10 ug/dL. Universal screening for all children under the age of 6 and community-wide environmental interventions are recommended.

RHODE ISLAND CHILDHOOD LEAD POISONING PREVENTION ACT OF 1991

In January 1993, Rhode Island regulations became effective under the Childhood Lead Poisoning Prevention Act of 1991. This law requires a coordinated, comprehensive primary prevention program for lead poisoning including: screening, inspections, abatement, control, and enforcement.

FEDERAL TITLE X: DISCLOSURE REQUIREMENTS

The Residential Lead-Based Paint Hazard Reduction Act of 1992, known as Title X, directed HUD and EPA to create requirements for disclosure of lead-based paint and lead-based paint hazards at the time of sale or rental for all residential properties built before 1978. These regulations, which took effect in the Fall of 1996, state that sellers and landlords must disclose known lead-based paint hazards.

PROMISING STRATEGIES IN RHODE ISLAND

Effective prevention strategies depend upon the government, financial institutions, enforcement agencies, and the community taking an active role in prevention.

While there is more to be done to make it possible for all children to live in lead-safe environments, the following programs are important resources for preventing childhood lead poisoning in Rhode Island.

GOVERNMENT

The Rhode Island Department of Health Childhood Lead Poisoning Control Program
The Rhode Island Childhood Lead Poisoning Control Program offers screening to children living in high-risk communities through its summer door-to-door screening program. It also provides comprehensive environmental inspection and enforcement services for all confirmed cases of significant lead poisoning. The Department of Health operates the only authorized laboratory in Rhode Island to analyze lead screening samples and maintains a tracking system for all children screened. The Childhood Lead Poisoning Control Program is funded entirely through federal programs. For more information call RI DOH at 401-277-2312.

East Providence Lead-Safe Program
The East Providence Lead Safe Program is the only municipally-managed lead poisoning prevention program in Rhode Island. It provides information, resources, free home lead inspections, and blood lead screenings to all children under 6 years old. A public awareness campaign provides parents, tenants, and homeowners with information on lead hazard reduction. For more information call East Providence Lead Safe Program at 401-435-7539.

FINANCE

Rhode Island Housing Mortgage and Finance Corporation
In its third year of operation, Rhode Island Housing's Lead Hazard Reduction Program enables homeowners and landlords to borrow up to $15,000 per unit for lead abatement. The first $5,000 is a forgivable loan and 20% is forgiven each year up to year five; the remaining $10,000 is in the form of a no-interest, deferred loan. For more information call RI Housing at 401-457-1127.

Tax Credits
Tax credits of up to $1,000 are available for homeowners for the removal of lead hazards. These credits can be taken when filing state income taxes.

COMMUNITY

***The Heart of Elmwood* at Greater Elmwood Neighborhood Services**
Financed through HUD, *The Heart of Elmwood* project provides lead awareness training to families in nine square blocks in the Elmwood section of Providence. Interim housing is provided for families while their houses are made lead-safe by unemployed and under-employed Elmwood residents who have been trained and licensed to abate homes. For more information call Greater Elmwood Neighborhood Services at 401-461-4111.

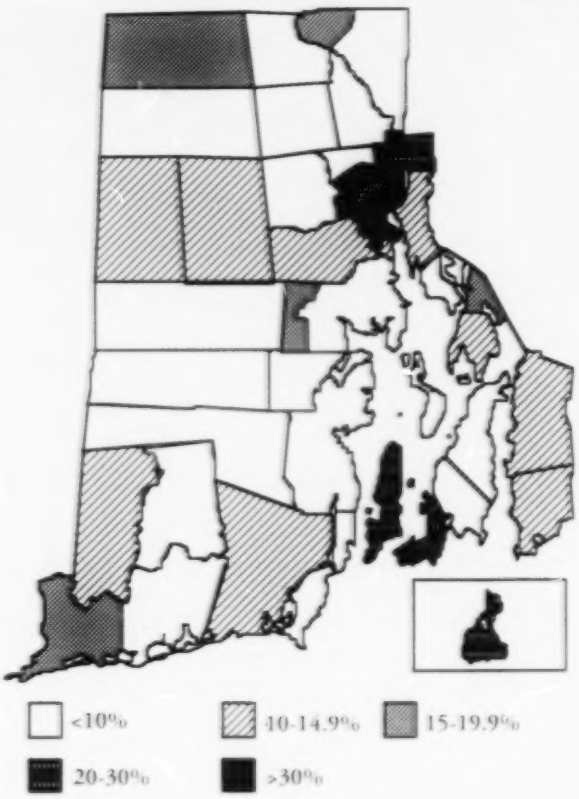
Childhood Lead Action Project
The Childhood Lead Action Project is a statewide organization which works to eliminate childhood lead poisoning through education, parent support, and advocacy. The Project provides leadership to the **Get the Lead Out Coalition**, a statewide network of environmental, housing, health, and social service advocates working collaboratively to promote public policy changes. For more information call Childhood Lead Action Project at 401-785-1310.

LEGAL

RI Attorney General's Office
In late 1996, the first case under the Rhode Island Childhood Lead Poisoning Prevention Act of 1991 was brought against a landlord (of a lead-poisoned tenant) who failed to comply with abatement. The case is still pending.

Housing Courts
The cities of Providence and Pawtucket have established separate municipal Housing Courts to hear cases in violations of the housing and building codes. Any appeals from Housing Court proceed directly to the RI Supreme Court rather than to District Court.

PERCENTAGE OF CHILDREN WITH BLOOD LEAD LEVELS ABOVE 10 UG/DL BASED ON PRELIMINARY SCREENING RHODE ISLAND, 1995



All percentages are based on the screening of 34,389 Rhode Island children under age 6. Overall, the percentage of Rhode Island children with lead levels ≥ 10 ug/dL is 19.5%. Source: Rhode Island Department of Health, Office of Health Risk Assessment, 1995.

LEAD EXPOSURE IN CHILDREN UNDER AGE 6 RHODE ISLAND, 1995

Rhode Island law requires regular lead screening of all children under age six. 34,389 Rhode Island children under age 6 were screened for lead during 1995.

- Of Rhode Island children under age 6 who were screened, one in five was found to have blood lead levels at or above 10 ug/dL. Levels ≥ 10 ug/dL can have subtle effects on IQ, cognitive ability, and neurobehavioral development.
- In Providence and Central Falls more than one in three children screened had blood lead levels at or above 10 ug/dL.
- In the communities of Pawtucket, Newport, Jamestown, and Block Island between 20% and 30% of children screened had blood lead levels at or above 10 ug/dL.
- In 14 other communities across Rhode Island, more than 10% of children screened had blood lead levels at or above 10 ug/dL.

PERCENTAGE OF CHILDREN WITH BLOOD LEAD LEVELS ≥ 10 UG/DL BASED ON PRELIMINARY SCREENING, RHODE ISLAND, 1995

City/Town	#Children Under Age 6 Screened	# Screened with Elevated Levels ≥ 10 ug/dL	% with Elevated Levels ≥10 ug/dl
Barrington	579	41	7.1%
Bristol	688	70	10.2%
Burrillville	465	78	16.8%
Central Falls	1,126	348	30.9%
Charlestown	235	21	8.9%
Coventry	659	49	7.4%
Cranston	1,802	252	14.0%
Cumberland	811	80	9.9%
East Greenwich	229	17	7.4%
East Providence	1,287	164	12.7%
Exeter	181	13	7.2%
Foster	112	13	11.6%
Glocester	206	12	5.8%
Hopkinton	156	19	12.2%
Jamestown	190	49	25.8%
Johnston	508	45	8.9%
Lincoln	513	49	9.6%
Little Compton	70	8	11.4%
Middletown	439	40	9.1%
Narragansett	523	40	7.6%
Newport	947	213	22.5%
New Shoreham	46	12	26.1%
North Kingstown	862	74	8.6%
North Providence	578	53	9.2%
North Smithfield	240	17	7.1%
Pawtucket	3,068	692	22.6%
Portsmouth	409	36	8.8%
Providence	9,739	3,095	31.8%
Richmond	210	15	7.1%
Scituate	231	28	12.1%
Smithfield	332	22	6.6%
South Kingstown	998	146	14.6%
Tiverton	444	47	10.6%
Warren	403	64	15.9%
Warwick	1,681	164	9.8%
Westerly	267	49	18.4%
West Greenwich	126	7	5.6%
West Warwick	775	129	16.6%
Woonsocket	2,137	424	19.8%
Unknown Residence	*117*	*19*	*16.2%*
Core Cities	*17,017*	*4,772*	*28.0%*
Remainder of State	*17,255*	*1,923*	*11.1%*
Rhode Island	*34,389*	*6,714*	*19.5%*

Approximately 50% of the estimated 70,000 RI children under age 6 are screened for elevated blood lead levels in any given year. Source: Rhode Island Department of Health, Office of Health Risk Assessment, 1995

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The Rhode Island Foundation
Rhode Island College
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Rhode Island KIDS COUNT Staff

Elizabeth Burke Bryant,
Executive Director
Elizabeth Melendez,
Administrative Assistant
Ann-Marie Harrington,
Research Analyst

Issue Brief Editors

Ann-Marie Harrington
Catherine Boisvert Walsh
Elizabeth Burke Bryant

RHODE ISLAND KIDS COUNT
70 Elm Street
Providence, RI 02903
Phone: 401-351-9400
Fax: 401-351-1758
E-Mail: HN3170@handsnet.org
rikids@rikidscount.org
Website: www.rikidscount.org

Rhode Island kids count